

Selection of a silicon source with a vapor pressure of at least 50 torr at about 20 C is not an obvious selection, in that numerous silicon containing compounds which do not meet this criterion exist. Precursors which do not meet this criterion require extra processing steps and/or equipment (bubbler, vaporizer, etc). As Colombo '678 makes no mention of the silicon precursor's vapor pressure, therefore selection of a precursor which meets this criteria cannot be a simple optimization asserted by the Examiner. Colombo '678 describes general process conditions (see para 12) but does not the properties of the silicon precursor.

Furthermore, Colombo '678 does not describe a method of forming a MSiN or MSiON dielectric film in a single step such that a post deposition step is not necessary. Colombo '678 requires post deposition steps (see para 0018 and 0025), and therefore teaches away from the single step approach of the instant invention. For at least these reasons, the Applicants respectfully contend that the basis for this rejection should be reconsidered.

Claims 24, 29 – 30, 32, 34, 38 and 41 are rejected as being obvious in light of the combination of Colombo '678 with Buchanan '591. The addition of Buchanan '591 does not remedy the aforementioned deficiencies of the Colombo '678 reference. Further, since Buchanan '591 discloses a deposition process for a metal oxide film, on a silicon layer, and it does not teach, disclose or suggest a deposition of a MSiO or MSiN film (i.e. a layer containing silicon), as per the instant invention, Buchanan '591 either alone or in combination with Colombo '678 teaches away from the instant invention. For at least these reasons, the Applicants respectfully contend that the basis for this rejection should be reconsidered.

Claims 21, 25, 27-28, 37 and 39 are rejected as being obvious in light of the combination of Colombo '678 with Buchanan '591 and Oshita.

The addition of Oshita does not remedy the aforementioned deficiencies of Colombo '678 and Buchanan '591. Oshita describes methods of depositing films

which contain a minimum of carbon content, from a precursor which contains carbon (namely $\text{SiH}(\text{NEt}_2)_3$). Oshita does not teach or suggest a silicon source which is free of carbon. The Applicants respectfully contend that the Examiner's statement that "it would have been obvious to have a molecular structure absent carbon, as carbon acts as an impurity which increases leakage current ..." is an example of impermissible hindsight. One of skill in the art, taught by Oshita the desirability of minimizing the carbon content in the final film, would not find a teaching or a suggestion as to carbon free silicon precursors suitable for deposition of MSiON or MSiN films. For at least these reasons, the Applicants respectfully contend that the basis for this rejection should be reconsidered.

Appl. No. 10/591,629
Attorney Docket No. Serie 6550 CIP
Amdt. dated June 30, 2008
Response to Final Office Action of April 29, 2008

CONCLUSION

Accordingly, it is believed that the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited. Should the Examiner believe a telephone call would expedite the prosecution of the application, he is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'B. S. Clark', is written over a horizontal dotted line.

Brandon S. Clark
Registration No. 59,020

Date: **June 30, 2008**

Air Liquide
2700 Post Oak Blvd., Suite 1800
Houston, Texas 77056
Phone: (713) 624-8787
Fax: (713) 624-8950